

## REMARKS

### Status Summary

Claims 1-10 and 48-57 are pending. New dependent claims 79-82 are added and no claims are cancelled. Therefore, claims 1-10, 48-57, and 79-82 will be pending.

### Examiner Interview

Applicants greatly appreciate the Examiner Interview granted them on June 25, 2003 in which agreement was reached. The amendments above and remarks below are consistent with the discussion in the Interview.

In the Interview, the amendments to claims 1 and 48 were discussed. In particular, claims 1 and 48 have been specifically amended to recite that the receiving, encapsulation, and sending of SS7 user part messages occurs at a signal transfer point. Performing these steps at a signal transfer point is not disclosed or rendered obvious by the disclosure of Curry. In particular, Curry requires internet module 130, which is a stand-alone protocol converter, in order to convert between SS7 and IP. As discussed in the Background section of Applicants' specification, requiring the use of stand-alone protocol converters is one of the very problems that the present invention was intended to solve. For example, stand-alone protocol converters would be required on every access link in the network in order to interoperate SS7 and IP end offices. By locating the SS7 user part to IP conversion functionality at an STP, since STPs are typically connected to all of the end offices in a given provider's network, the need for converters at each end office is eliminated.

In addition, Curry discloses in column 22, at line 8 that the message sent from STP 118 is a "query message." It is respectfully submitted that a person of skill in the art would not understand a query message to be an SS7 user part message. SS7 user part messages, such as ISDN user part messages, are used to establish and tear down calls between end offices. They are not query messages.

As further evidence that the claimed invention is patentable over Curry, Applicants have attached copies of (1) an Affidavit under 37 C.F.R. § 1.132, (2) a

Curriculum Vitae of the Affiant, and (3) evidence of commercial success of the claimed invention, all of which were submitted in the parent application (Application Serial No. 09/205,809 (now U.S. Patent No. 6,324,183)). In the Affidavit pursuant to 37 C.F.R. § 1.132, Dr. Harry G. Perros, a computer science professor at North Carolina State University in Raleigh, North Carolina, states that he has reviewed the Curry patent and it is his technical opinion that it would not be obvious to a person of skill in the art to incorporate SS7 to IP conversion functionality in a signal transfer point. With regard to the evidence of commercial success, Applicants have attached an email including sales information obtained from employees of the Assignee of the present application. The sales information indicates that Applicant's IP7 equipment, which the claims of the present application read on, accounted for approximately \$22 million in sales as of July 26, 2000. Accordingly, Applicants respectfully submit that this commercial success of the claimed invention is additional evidence of the non-obviousness of locating SS7 user part to IP conversion functionally at an STP invention.

Accordingly, in light of the Interview, the amendments and statements presented herein, Applicants respectfully submit that the claims should now be in condition for allowance.

#### Claim Rejections 35 U.S.C. § 102(e)

Claims 1, 2, 5, 10, 48, 49, 52, and 57 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 5,923,659 to Curry et al. (hereinafter, "Curry"). This rejection is respectfully traversed.

#### The Present Invention

The present invention, as claimed in independent claims 1 and 49, includes methods and computer program products for using a signal transfer point (STP) to encapsulate and transmit SS7 user part messages over an IP network. For example, claim 1 has been amended to recite as follows:

1. (Currently Amended) A method for transmitting signaling system seven (SS7) user part messages between SS7 signaling points comprising:
  - (a) receiving, at a first signal transfer point (STP), a first SS7 user part message sent from a first SS7 signaling point over an SS7 signaling link;
  - (b) at the first signal transfer point, encapsulating the first SS7 user part message in a first internet protocol (IP) packet; and
  - (c) from the first signal transfer point, transmitting the first IP packet to a second SS7 signaling point over an IP network.

As recited in claim 1, an SS7 user part message is received at a signal transfer point. The SS7 user part message was sent from an SS7 signaling point over an SS7 signaling link. At the signal transfer point, the SS7 user part message is encapsulated in an IP packet. The IP packet including the encapsulated SS7 message is then sent from the signal transfer point to a second SS7 signaling point over an IP network. Thus, according to claim 1, all of the steps for sending an SS7 user part signaling message received from an SS7 signaling point over an SS7 signaling link are performed at an STP. Similar amendments have been made to independent claim 49. Providing such functionality in a signal transfer point eliminates the problems described in the background section of the present application of conventional stand-alone protocol converters. (See, e.g., page 10, line 11 through page 13, line 8 of the present specification.)

There is no disclosure in Curry of an SS7 signal transfer point that (1) receives SS7 user part messages over SS7 signaling links, (2) encapsulates the SS7 user part messages in IP packets, and (3) transmits the encapsulated SS7 user part messages to an SS7 signaling node over an IP network. Curry is directed to a system for controlling calls between different international networks where some of the signaling traffic sent between the networks is sent over Internet 136. To perform conversion of SS7 signaling traffic for transmission over Internet 136, Curry discloses server Internet module 130. Server Internet module 130 is not a signal transfer point; rather, it is a stand-alone protocol converter. The use of stand-alone protocol converters is one of the problems that the present invention attempts to avoid. Thus,

by disclosing server Internet module 130, Curry does not anticipate the claimed invention.

STP 118 of Curry likewise does not anticipate the claimed invention. For example, Curry nowhere states that STP 118 includes SS7-to-IP conversion functionality for user part messages. As illustrated in Figure 9 of Curry, the only interfaces to STP 118 are SS7 interfaces. There is no disclosure in Curry of a signal transfer point that receives SS7 user part messages over SS7 signaling links, converts the SS7 user part messages into IP signaling messages and forwards the IP encapsulated SS7 user part messages over an IP signaling link. Thus, it is respectfully submitted that the rejection of claims 1, 2, 5, 10, 48, 49, 52, and 57 as anticipated by Curry should now be withdrawn.

Claim Rejections 35 U.S.C. § 103

Claims 3 and 50 were rejected under 35 U.S.C. § 103(a) as unpatentable over Curry. This rejection is respectfully traversed.

As discussed above, Curry fails to teach or suggest a method for using a signal transfer point to receive SS7 user part messages over SS7 signaling links, encapsulate the SS7 user part messages in IP datagrams, and forward the IP datagrams to SS7 signaling nodes over an IP signaling link. As indicated above, Curry discloses that server Internet module 130 is required to perform conversion between SS7 and IP protocols. Such stand-alone conversion functionality is one of the problems that the present invention is intended to solve and would not have been obvious to a person of ordinary skill in the art at the time the invention was made because of the high processing demand placed on signal transfer points for normal SS7 routing and global title translation. Accordingly, because Curry fails to teach or suggest the invention claimed in amended independent claims 1 and 49, it is respectfully requested that the rejection of dependent claims 3 and 50 should now be withdrawn.

Claims 4 and 51 were rejected 35 U.S.C. § 103(a) as unpatentable over Curry in view of U.S. Patent No. 5,173,897 to Schrodi et al. (hereinafter, "Schrodi"). This rejection is respectfully traversed.

As stated above, Curry fails to teach or suggest performing the steps claimed in independent claims 1 or 49 at a signal transfer point. Schrodi likewise fails to teach or suggest such an invention. Schrodi is directed to a method for sequencing ATM cells by adding a sequence number to the ATM cells. There is no disclosure in Schrodi of receiving SS7 user part messages at a signal transfer point, encapsulating the SS7 user part messages and IP datagrams, and sending the IP encapsulated SS7 user part messages to an SS7 signaling node over an IP network. Accordingly, it is respectfully submitted that the rejection of claims 4 and 51 as unpatentable over Curry in view of Schrodi should now be withdrawn.

Claims 6-9 and 53-56 were rejected as unpatentable over Curry in view of U.S. Patent No. 6,328,267 to Valentine et al. (hereinafter, "Valentine"). This rejection is respectfully traversed.

As stated above, Curry fails to teach or suggest using a signal transfer point to receive SS7 signaling messages over SS7 signaling links, to encapsulate the SS7 user part messages in IP datagrams at the signal transfer point, and to transmit the IP encapsulated user part messages from the signal transfer point to SS7 signaling nodes over an IP network. Curry is directed to a stand-alone protocol converter 130. Valentine is directed to a system for performing global title translation where a destination IP address is global title translated into an SS7 point code and subsystem number. Like Curry, Valentine discloses that a stand-alone protocol converter, referred to as access server 611, is required to perform the conversion (see Figure 6 of Valentine.) There is absolutely no teaching or suggestion in Valentine of a signal transfer point that receives an SS7 user part message sent from an SS7 signaling node over an SS7 signaling link, encapsulates the SS7 user part message in an IP datagram and transmits the SS7 user part message to an SS7 signaling node over an IP network. Accordingly, it is respectfully submitted that the rejection of claims 6-9 and 53-56 as unpatentable over Curry in view of Valentine should now be withdrawn.

Request for Acknowledgment of Consideration of References in Previously Filed  
Information Disclosure Statements

Applicants have not received acknowledgment of Examiner's consideration of the references listed on the PTO forms PTO/SB/08A and 08B included in the Information Disclosure Statements filed on January 19, 2000 and May 1, 2000. Copies of the January 19, 2000 and May 1, 2000 Information Disclosure Statements, the unacknowledged PTO/SB/08A and PTO/SB/08B forms, and the return receipt post cards indicating that the Information Disclosure Statements were received by the Office of Initial Preliminary Examination are attached hereto.

In addition to the above-referenced unacknowledged IDSs, Applicants have not received acknowledgement of the Examiner's consideration of the Information Disclosure Statement filed electronically on February 20, 2003. Copies of the Electronic Information Disclosure Statement and the Acknowledgment Receipt indicating that the Information Disclosure Statement was successfully uploaded to the U.S. Patent and Trademark Office are attached hereto.

Because the above-referenced Information Disclosure Statements were timely filed and in compliance with 37 C.F.R. § 1.97 and § 1.98, Applicants respectfully request acknowledgment of the Examiner's consideration of the references cited on the attached PTO/SB/08A, PTO/SB/08B, and the Electronic Information Disclosure Statement by returning initialed copies of these forms to the applicants. Copies of the cited references are not attached hereto because copies were provided in the above-referenced Information Disclosure Statements. However, if the Examiner should require copies of any of the cited references, the Examiner is requested to call Applicants' undersigned attorney and copies will be provided upon the Examiner's request.

New Dependent Claims

New dependent claims 79-82 are proposed to be added. Claim 79 and 81 depend from claims 1 and 48, respectively, and recite that the SS7 user part

message comprises an ISDN user part message. Support for these claims is found throughout the application, for example, on page 13, lines 10-16 of the present specification. Claims 80 and 82 recite that the STP intercepts an SS7 user part message addressed to a destination end office and inserts the IP address of the destination end office in the user part message. Support for these claims is found in Figures 17 and 18 of the present specification and the associated description. Because these claims depend from and further limit claims 1 and 48, it is respectfully submitted that these claims should also be in condition for allowance.

#### CONCLUSION

If any small matter should remain outstanding after the Patent Examiner has had an opportunity to review the above Remarks, the Patent Examiner is respectfully requested to telephone the undersigned patent attorney in order to resolve these matters and avoid the issuance of another Official Action.

The Commissioner is hereby authorized to charge any fees associated with the filing of this correspondence to Deposit Account No. 50-0426.

Respectfully submitted,

JENKINS & WILSON, P.A.

Date: June 27, 2003

By: 

Gregory A. Hunt  
Registration No. 41,085

Customer No. Bar Code Label:



25297

PATENT TRADEMARK OFFICE

1322/8

GAH/sed

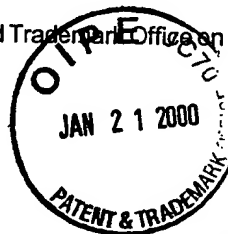
COPY

The U.S. Patent and Trademark  
Office date stamp sets forth the  
date of receipt of:

Attorney: REJ/GAH  
Docket No.: 1322/8  
Applicant(s): Sprague et al.  
Serial No.: ~~09/443,713~~ 09/443,712

The following items mailed to the U.S. Patent and Trademark Office on the date indicated  
below:

1. Information Disclosure Statement
2. Form PTO/SB/08A
3. Form PTO/SB/08B
4. Cited References
5. Return-Receipt Postcard



- ☒ First Class Mail  
☐ Express Mail Label No.:

JAN 31 2000

Date Transmitted:

1/19/2000

By:

*[Signature]*



COPY

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231 on 1/19/2000

Lynette M. Bailey  
Date of Signature

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Sprague et al.

Examiner: Not Assigned

Serial No.: 09/443,712

Group Art Unit: Not Assigned

Filed: November 19, 1999

Docket No.: 1322/8

For: METHODS AND SYSTEMS FOR COMMUNICATING SIGNALING SYSTEM 7 (SS7) USER PART MESSAGES AMONG SS7 SIGNALING POINTS (SPs) AND INTERNET PROTOCOL (IP) NODES USING SIGNAL TRANSFER POINTS (STPs)

\*\*\*\*\*

INFORMATION DISCLOSURE STATEMENT

Honorable Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

Sir:

In accordance with 37 C.F.R. 1.56, 1.97, and 1.98, applicants' undersigned attorney brings to the attention of the U.S. Patent and Trademark Office the references listed on Forms PTO/SB/08A and PTO/SB/08B attached hereto. Copies of the listed references are also attached hereto. This is not to be construed as a representation that a search has been made or that a reference is relevant merely because cited.

Although it is believed that no fee is due, the Commissioner is authorized to charge any deficiencies or credit any overpayments associated with the filing of this Information Disclosure Statement to Deposit Account Number 50-0426.

COPY

Early passage of the subject application to issue is earnestly solicited.

Respectfully submitted,

JENKINS & WILSON, P.A.

Date: 1-19-00

By:

Richard E. Jenkins  
Richard E. Jenkins  
Registration No. 28,428

Suite 1400, University Tower  
3100 Tower Boulevard  
Durham, North Carolina 27707  
Telephone: (919) 493-8000  
Facsimile: (919) 419-0383

1322/8 REJ/GAH/lmb

Enclosures: Form PTO/SB/08A  
Form PTO/SB/08B  
Cited References

COPY

The U.S. Patent and Trademark  
Office date stamp sets forth the  
date of receipt of:

Attorney: REJ/GAH  
Docket No.: 1322/8  
Applicant(s): Sprague et al.  
Serial No.: 09/443,712

The following items mailed to the U.S. Patent and Trademark Office on the date indicated  
below:

1. Information Disclosure Statement
2. Form PTO/SB/08A
3. Cited References
4. Return-Receipt Postcard

☒ First Class Mail

☐ Express Mail Label No.: \_\_\_\_\_

Date Transmitted: 5/1/00

By: [Signature]



MAY 12 2000

COPY

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231 on May 11, 2000

Lynette M. Bailey  
Date of Signature

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Sprague et al.

Examiner: Not Assigned

Serial No.: 09/443,712

Group Art Unit: 2742

Filed: November 19, 1999

Docket No.: 1322/8

For: METHODS AND SYSTEMS FOR COMMUNICATING SIGNALING SYSTEM 7 (SS7) USER PART MESSAGES AMONG SS7 SIGNALING POINTS (SPs) AND INTERNET PROTOCOL (IP) NODES USING SIGNAL TRANSFER POINTS (STPs)

\*\*\*\*\*

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In accordance with 37 C.F.R. 1.56, 1.97, and 1.98, applicants' undersigned attorney brings to the attention of the U.S. Patent and Trademark Office the following references. Copies of the references as well as Form PTO/SB/08A are attached hereto. This is not to be construed as a representation that a search has been made or that a reference is relevant merely because cited.

U.S. Patent No. 5,384,840 to Blatchford et al. discloses a telecommunications system SS7 signaling interface with signal transfer capability.

U.S. Patent No. 5,889,954 to Gessel et al. discloses a network manager providing advanced interconnection capability.

U.S. Patent No. 5,974,052 to Johnson et al. discloses a frame relay access device and method for transporting SS7 information between signaling points.

U.S. Patent No. 6,014,379 to White et al. discloses telecommunication customer calling services.

Early passage of the subject application to issue is earnestly solicited.

Although it is believed that no fee is due, the Commissioner is authorized to charge any deficiencies or credit any overpayments associated with the filing of this Supplemental Information Disclosure Statement to Deposit Account Number 50-0426.

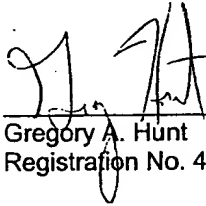
Respectfully submitted,

JENKINS & WILSON, P.A.

Date:

5/1/2000

By:



\_\_\_\_\_  
Gregory A. Hunt  
Registration No. 41,085

Suite 1400 University Tower  
3100 Tower Boulevard  
Durham, North Carolina 27707  
Telephone: (919) 493-8000  
Facsimile: (919) 419-0383

1322/8      GAH/lmb

Enclosures